

Abstract

Method for Operating an Internal Combustion Engine
of a Vehicle, in Particular a Motor Vehicle

The invention relates to a method for operating an internal combustion engine of a vehicle, in particular a motor vehicle, with a first operating range as the lean operating range, to discharge the nitrogen oxide storage catalyst by means of an engine control device switching from the lean operating range to the rich operating range taking place. As claimed in the invention, the engine control device blocks switching into the lean operating range if the additional amount of fuel consumption for discharges in a certain, definable evaluation interval which extends over several lean operating phases is greater than or equal to the reduced amount of fuel consumption by lean operation in this monitoring interval. Furthermore, the engine control device enables lean operation and thus switching between the lean operating range and the homogeneous operating range if the additional amount of fuel consumption for discharges in the evaluation interval is smaller than the reduced amount of fuel consumption by lean operation in this evaluation interval. The reduced amount of fuel consumption is determined as a function of the raw mass flow value of the nitrogen oxide averaged over the evaluation interval, as a function of the amount of fuel saved which has been averaged over the evaluation time interval in the lean operating phases which occur in the evaluation interval compared to the homogeneous operating range phases in this evaluation interval, and as a function of the time between two torque requirements which exceed a definable load boundary value and/or rpm boundary value and which cause departure from the lean operating range, which time has been averaged over the evaluation interval, while the additional amount of fuel consumption is determined as a function of a storage catalyst charging state averaged over the evaluation interval.

(FIG. 1)